

IN THE CLAIMS

[1] (Original) A process for preparing a microencapsulated pigment, which comprises adding a polymerizable surfactant having a hydrophilic group, a hydrophobic group and a polymerizable group, a polymerization initiator and an aqueous medium to a wet pigment, and conducting emulsion polymerization to encapsulate pigment particles with a polymer.

[2] (Original) A process for preparing a microencapsulated pigment, which comprises adding a polymerizable surfactant having a hydrophilic group, a hydrophobic group and a polymerizable group, a comonomer copolymerizable with the above-mentioned polymerizable surfactant, a polymerization initiator and an aqueous medium to a wet pigment, and conducting emulsion polymerization to encapsulate pigment particles with a copolymer.

[3] (Original) The process described in the above [2], wherein the above-mentioned comonomer is a hydrophilic monomer and/or a hydrophobic monomer.

[4] (Original) The process described in the above [3], wherein the above-mentioned hydrophobic monomer has at least a hydrophobic group and a polymerizable group in its structure, and the hydrophobic group is selected from the group consisting of aliphatic hydrocarbon groups, alicyclic hydrocarbon groups and aromatic hydrocarbon groups.

[5] (Original) The process described in the above [3], wherein the above-mentioned hydrophilic monomer has at least a hydrophilic group and a polymerizable group in its structure, and the hydrophilic group is selected from the group consisting of a sulfonic acid group, a sulfinic acid group, a carboxyl group, a carbonyl group, salts of these groups, a hydroxyl group, an oxyethylene group, an amido group and an amino group.

[6] (Currently Amended) The process described in ~~any one of the above [2] to [5]~~ claim 2, wherein the polymerizable group of the above-mentioned comonomer is a radically polymerizable unsaturated hydrocarbon group selected from the group consisting of a vinyl group, an allyl group, an acryloyl group, a methacryloyl group, a propenyl group, a vinylidene group and a vinylene group.

[7] (Currently Amended) The process described in ~~any one of the above [1] to [6]~~ claim 1, wherein the pigment constituting the above-mentioned pigment particles is carbon black or an organic pigment.

[8] (Currently Amended) The process described in ~~any one of the above [1] to [7]~~ claim 1, wherein the polymerizable group of the above-mentioned polymerizable surfactant is a group selected from the group consisting of a vinyl group, an allyl group, an acryloyl group, a methacryloyl group, a propenyl group, a vinylidene group and a vinylene group.

[9] (Currently Amended) The process described in ~~any one of the above [1] to [8]~~ claim 1, wherein the hydrophilic group of the above-mentioned polymerizable surfactant is an anionic group selected from the group consisting of a sulfonic acid group, a sulfinic acid group, a carboxyl group, a carbonyl group and salts of these groups, and/or a nonionic group selected from the group consisting of a hydroxyl group and an oxyethylene group.

[10] (Currently Amended) The process described in ~~any one of the above [1] to [9]~~ claim 1, wherein the hydrophobic group of the above-mentioned polymerizable surfactant is a group selected from the group consisting of alkyl groups, aryl groups and combinations thereof.

[11] (Currently Amended) A microencapsulated pigment obtained by using the process according to ~~any one of the above [1] to [10]~~ claim 1.

[12] (Original) The microencapsulated pigment described in the above [11], which has an aspect ratio of 1.0 to 1.3, and a Zingg index of 1.0 to 1.3.

[13] (Currently Amended) An aqueous dispersion containing the microencapsulated pigment described in the above [11] ~~or [12]~~.

[14] (Original) An ink for ink jet recording containing the aqueous dispersion described in the above [13].

[15] (Original) An ink for ink jet recording containing an aqueous dispersion of a microencapsulated pigment in which pigment particles are encapsulated with a polymer,
wherein the above-mentioned microencapsulated pigment is formed by adding a polymerizable surfactant having a hydrophilic group, a hydrophobic group and a polymerizable group, a polymerization initiator and an aqueous medium to a wet pigment, and conducting emulsion polymerization, and
wherein the above-mentioned aqueous dispersion has been subjected to purification treatment, and the concentration of unreacted polymerizable surfactant after the above-mentioned purification treatment is 50000 ppm or less based on the aqueous component in the above-mentioned aqueous dispersion.

[16] (Original) An ink for ink jet recording containing an aqueous dispersion of a microencapsulated pigment in which pigment particles are encapsulated with a polymer, wherein the above-mentioned microencapsulated pigment is formed by adding a polymerizable surfactant having a hydrophilic group, a hydrophobic group and a polymerizable group, a comonomer copolymerizable with the above-mentioned polymerizable surfactant, a polymerization initiator and an aqueous medium to a wet pigment, and conducting emulsion polymerization, and

wherein the above-mentioned aqueous dispersion has been subjected to purification treatment, and the total concentration of unreacted polymerizable surfactant and comonomer after the above-mentioned purification treatment is 50000 ppm or less based on the aqueous component in the above-mentioned aqueous dispersion.

[17] (Currently Amended) An ink for ink jet recording containing at least the microencapsulated pigment described in the above [11] ~~or [12]~~ and water.

[18] (Currently Amended) The ink for ink jet recording described in any one of the above [14] to [17], further containing a water-soluble organic solvent.

[19] (Original) The ink for ink jet recording described in the above [18], wherein the above-mentioned water-soluble organic solvent is a high boiling water-soluble organic solvent having a boiling point of 180 C or higher.

[20] (Currently Amended) The ink for ink jet recording described in the above [18] ~~or [19]~~, wherein the above-mentioned water-soluble organic solvent contains at least one compound selected from the group consisting of glycerol, an alkyl ether of a polyhydric alcohol and an 1,2-alkyldiol.

[21] (Currently Amended) The ink for ink jet recording described in any one of the above [14] ~~to [20]~~, further containing a solid wetting agent in an amount of 3% to 20% by weight based on the total weight of the above-mentioned ink for ink jet recording.

[22] (Original) The ink for ink jet recording described in the above [21], wherein the above-mentioned solid wetting agent is trimethylolpropane and/or 1,2,6-hexanetriol.

[23] (Currently Amended) The ink for ink jet recording described in any one of the above 15, further containing a solid wetting agent in an amount of 3% to 20% by weight based on the total weight of the above-mentioned ink for ink jet recording.

[24] (Original) The ink for ink jet recording described in the above [23], wherein the above-mentioned surfactant is an acetylene glycol-based surfactant and/or an acetylene alcohol-based surfactant.

[25] (Currently Amended) The ink for ink jet recording described in any one of the above [14] to [24], further containing a saccharide.

26. (New) The process described in claim 2, wherein the pigment constituting the above-mentioned pigment particles is carbon black or an organic pigment.

27. (New) The process described in claim 2, wherein the polymerizable group of the above-mentioned polymerizable surfactant is a group selected from the group consisting of a vinyl group, an allyl group, an acryloyl group, a methacryloyl group, a propenyl group, a vinylidene group and a vinylene group.

28. (New) The process described in claim 2, wherein the hydrophilic group of the above-mentioned polymerizable surfactant is an anionic group selected from the group consisting of a sulfonic acid group, a sulfinic acid group, a carboxyl group, a carbonyl group and salts of these groups, and/or a nonionic group selected from the group consisting of a hydroxyl group and an oxyethylene group.

29. (New) The process described in claim 2, wherein the hydrophobic group of the above-mentioned polymerizable surfactant is a group selected from the group consisting of alkyl groups, aryl groups and combinations thereof.

30. (New) A microencapsulated pigment obtained by using the process according to claim 2.

31. (New) The ink for ink jet recording described in any one of the above 15, further containing a solid wetting agent in an amount of 3% to 20% by weight based on the total weight of the above-mentioned ink for ink jet recording.

32. (New) The ink for ink jet recording described in any one of the above 15, further containing a solid wetting agent in an amount of 3% to 20% by weight based on the total weight of the above-mentioned ink for ink jet recording.

33. (New) The ink for ink jet recording described in any one of the above 17, further containing a solid wetting agent in an amount of 3% to 20% by weight based on the total weight of the above-mentioned ink for ink jet recording.

34. (New) The ink for ink jet recording described in any one of the above 15, further containing a solid wetting agent in an amount of 3% to 20% by weight based on the total weight of the above-mentioned ink for ink jet recording.

35. (New) The ink for ink jet recording described in any one of the above 16, further containing a solid wetting agent in an amount of 3% to 20% by weight based on the total weight of the above-mentioned ink for ink jet recording.

36. (New) The ink for ink jet recording described in any one of the above 17, further containing a solid wetting agent in an amount of 3% to 20% by weight based on the total weight of the above-mentioned ink for ink jet recording.

37. (New) The ink for ink jet recording described in any one of the above [14] to [24], further containing a saccharide.

38. (New) The ink for ink jet recording described in any one of the above [16], further containing a saccharide.

39. (New) The ink for ink jet recording described in any one of the above [17], further containing a saccharide.